Claims

[c1] 1. A driving method of a Liquid Crystal Display (LCD), the liquid crystal display comprising a back-light module and a liquid crystal display panel, wherein the liquid crystal display panel has a plurality of pixels, the driving method of the liquid crystal display comprising the steps of:

detecting the maximum grayscale X of all pixels in the present image;

adjusting brightness of the back-light module to (X / N) × L, where N is the highest grayscale of the image display system, and L is a corresponding brightness to the grayscale value N of the back-light module; and

adjusting a grayscale value Xa of each pixel to a mapping grayscale value Xb, and driving each of the pixels with the grayscale value Xb accordingly.

[c2] 2. The driving method of the liquid crystal display as recited in claim 1, wherein a mapping correlation between the grayscale value Xa and the grayscale value Xb is linear, and the correlation is performed as Xb = (Xa / X) × N.

[c3] 3. The driving method of the liquid crystal display as re-

cited in claim 1, wherein the mapping correlation between the grayscale value Xa and the grayscale value Xb is nonlinear.

[c4] 4. The driving method of the liquid crystal display as recited in claim 1, wherein light transmittance of each of the pixels is adjusted by a bias voltage based on the grayscale value Xb.

[c5] 5. A driving method of a liquid crystal display comprising a back-light module and a liquid crystal display panel, wherein the liquid crystal display panel has a plurality of pixels, the driving method of the liquid crystal display comprising the steps of:
dividing a plurality of grayscale values 0, 1, 2, ..., N into a plurality of segments, where N is the highest grayscale of the image display system;
detecting a maximum grayscale X of all pixels in the present image;
adjusting output brightness of the back-light module to (Y / N) × L, where Y is upper limit of one of the segments in which the maximum grayscale X is located, L is a corresponding output brightness of the back-light module to the grayscale N; and
adjusting a grayscale value Xa of each pixel to a mapping grayscale value Xb, and driving each of the pixels with the grayscale value Xb accordingly.

[c6] 6. The driving method of the liquid crystal display as recited in claim 5, wherein a mapping correlation between the grayscale value Xa and the grayscale value Xb is linear, and the mapping correlation is performed as Xb = (Xa / Y) × N.

[c7] 7. The driving method of the liquid crystal display as recited in claim 5, wherein the mapping correlation between the grayscale value Xa and the grayscale value Xb is nonlinear.

[c8] 8. The driving method of the liquid crystal display as recited in claim 5, wherein the corresponding output brightness of the back-light module is retained when the grayscale maximum X is located in either a range between Y and Y + S or a range between Z S and Z of a present image, where Z is lower limit of one of the segments in which segment the grayscale maximum X is located and S is the predetermined threshold.

[c9] 9. The driving method of the liquid crystal display as recited in claim 5, wherein each of the segments contains the same numbers of the grayscale values respectively.

[c10] 10. The driving method of the liquid crystal display as recited in claim 5, wherein each of the segments contains different numbers of the grayscale values respec-

tively.

[c11] 11. The driving method of the liquid crystal display as recited in claim 5, wherein light transmittance of each of the pixels is adjusted by a bias voltage based on the grayscale value Xb.